The energy metabolism of the heart and the utilization of substrates including glucose, fatty acids, amino acids, lactic acid and ketone bodies depend on circumstances, and are primarily based on fatty acid metabolism and glucose metabolism in a competitive manner. However, a shift to anaerobic metabolism because of low oxygen supplies causes ischemic myocardium to primarily utilize glucose. Many reports have discussed whether maintaining glucose metabolism is important in estimating the viability of ischemic myocardium, and some reports indicate that improvements in left ventricular function and the prevention of cardiac events are achieved with the use of aggressive revascularization procedures. The use of glucose-loaded 18F-fluoro-2-deoxyglucose (18F-FDG) PET has played a central role in helping cardiovascular interventionalists decide whether revascularization procedures are indicated in patients with old myocardial infarction (MI) with residual stenosis and angina pectoris. 18F-FDG-PET has been also utilized to evaluate systemic inflammatory diseases, including malignancies, because 18F-FDG accumulates in sites of inflammation.

Background: 18F-fluoro-2-deoxyglucose (FDG) positron emission tomography (PET) is assumed to be the most useful method for evaluating the viability of the myocardium. However, there are few reports regarding serial changes in 18F-FDG-PET images of acute myocardial infarction (AMI). We evaluated serial changes in glucose-loaded 18F-FDG-PET, 123I-β-methyl-p-iodophenyl-penta-decanoic acid (BMIPP) single-photon emission computed tomography (SPECT) and 99mTc-Tetrofosmin (TF) gated SPECT images in patients with AMI.

Methods and Results: We enrolled 7 consecutive patients with first anterior AMI who successfully underwent percutaneous coronary intervention (PCI). 18F-FDG-PET images were obtained in the acute, subacute, chronic, mid-term and long-term phases. 123I-BMIPP and 99mTc-TF SPECT images were obtained in the subacute, chronic, mid-term and long-term phases. We determined the total defect score (TDS) for each image. The TDS of the glucose-loaded 18F-FDG-PET, 123I-BMIPP and 99mTc-TF SPECT images indicated significant serial decrease (P<0.001). Comparing these images, the TDS of the glucose-loaded 18F-FDG-PET images was larger than that of the 123I-BMIPP and 99mTc-TF SPECT images, and the TDS indicated 18F-FDG-PET>123I-BMIPP>99mTc-TF in all phases.

Conclusions: The defect areas of glucose-loaded 18F-FDG-PET images were significantly larger than those of 123I-BMIPP and 99mTc-TF SPECT images during 9 months follow-up of patients with successful PCI for anterior AMI. Additionally, the impairment of glucose metabolism was prolonged. (Circ J 2013; 77: 137–145)

Key Words: Acute myocardial infarction; Glucose-loaded 18F-FDG-PET; Myocardial viability; Percutaneous coronary intervention
to be 3 or 4 weeks after the onset of the infarction when inflammation at the infarction site is stabilized. Additionally, some reports of fasting 18F-FDG-PET affirm the influence of inflammation on infarcted myocardium.16

Editorial p51

However, there are no reports of the changes in myocardial damage with serial 18F-FDG-PET following percutaneous coronary intervention (PCI) for AMI, and both the use of glucose-loaded 18F-FDG-PET alone to assess myocardial viability after reperfusion of MI and the appropriate timing for evaluation are still matters of argument. In addition, 1 report indicates that myocardial viability could be evaluated more precisely by comparing the results of glucose-loaded 18F-FDG-PET with those of fatty acid metabolism and myocardial perfusion.17

In this study, we evaluated the serial changes in glucose loaded 18F-FDG-PET, 123I-β-methyl-p-iodophenyl-penta-decanoic acid (BMIPP) single-photon emission computed tomography (SPECT) and 99mTc-Tetrofosmin (TF) gated SPECT images in patients with AMI in order to estimate the capability of glucose-loaded 18F-FDG-PET in evaluating myocardial viability.

Methods

Selection of Patients
We studied 7 consecutive patients who were admitted to hospital with a diagnosis of first anterior AMI. Each patient successfully underwent PCI and obtained good coronary flow without slow or no reflow. All of the patients had culprit lesions in the proximal left anterior descending artery, and only patients with single-vessel disease were enrolled in this study. Patients with severe cardiac failure in whom it was difficult to obtain glucose-loaded 18F-FDG-PET images in the acute phase were excluded.

The study protocol was approved by the institutional ethics committee, and all patients gave informed consent.

Examination Schedule of Myocardial Imaging and Serological Data
Each patient was treated with reperfusion therapy within 24 h of the onset of the MI. Glucose-loaded 18F-FDG-PET images were obtained in the acute phase (days 2–5), subacute phase (2 weeks), chronic phase (1 month), mid-term followed phase (3 months) and long-term followed phase (9 months). 123I-BMIPP, resting 99mTc-TF SPECT and quantitative gated SPECT images were obtained in the subacute, chronic, mid-term and long-term followed phases. Serological examination was performed at 6-h intervals in the acute phase to estimate the peak levels of cardiac enzymes. High-sensitivity C-reactive protein (hs-CRP) levels were measured in the acute, subacute and chronic phases as a marker of inflammation, considering the influence of local inflammation on the images.

Glucose-Loaded 18F-FDG-PET Imaging
Whole body PET imaging equipment (ECAT ACCEL Siemens) was used, and the images were acquired with 10 min of emission after 5 min of transmission scans. After undergoing an overnight fast, the patient was given 75 g of oral glucose. The images were obtained on 1-h blood glucose levels, followed by intravenous administration of 250 MBq of 18F-FDG.18 The dose of insulin was determined as follows: insulin dose = (blood glucose level – 130) / 10 unit, given a blood glucose level >130 mg/dl. The acquisition of the early-phase images began 1 h after the intravenous administration of 18F-FDG, and the acquisition of the late-phase images began 3 h after 18F-FDG administration.

TF Gated SPECT Imaging
We used 2-detector SPECT equipment with a low-energy, high-resolution collimator.
(Millennium VG, GE). The images were acquired from 360 degrees in 60 directions with 6 degree intervals at 40 s for each direction with the detectors facing each other. After undergoing an overnight fast, the patient was administered 740 MBq of $^{99m}$Tc-Tc intravenously, and the SPECT imaging began 40 min later. The energy peak during the acquisition of the SPECT images was 140 keV for $^{99m}$Tc, and the window width was ±10%.

### 123I-BMIPP SPECT Imaging

To complete the $^{123}$I-BMIPP SPECT imaging, we used the same equipment used for the $^{99m}$Tc-Tc SPECT imaging. After undergoing an overnight fast, the patient was administered 148 MBq of $^{123}$I-BMIPP intravenously, and the SPECT imaging began 15 min later in the same manner as for the $^{99m}$Tc-Tc SPECT imaging. The energy peak during the acquisition of the SPECT images was 159 keV for $^{123}$I, and the window width was ±10%.

### Analysis of the Images

Reconstructed images of the left ventricle of each patient (short-axis slices, vertical long-axis slices and horizontal long-axis slices) were created for non-gated data. To complete the image analyses, a myocardial polar map of each patient’s left ventricle was divided into 17 segments.\(^1\)\(^{-3}\) For each segment, 3 specialists, comprising 2 cardiovascular specialists and 1 nuclear medicine specialist, visually scored the degree of reduced accumulation in the glucose-loaded $^{18}$F-FDG-PET, $^{99m}$Tc-TF and $^{123}$I-BMIPP images using a 5-point grading system: 0=normal, 1=mild reduction, 2=moderate reduction, 3=severe reduction, 4=no reduction. The defect score (DS) was defined as the mean of the scores reported by the 3 analysts. In addition, the total DS (TDS) was defined as the sum of the DS of each myocardial scan image, and the TDS was calculated for each patient. To analyze the glucose-loaded $^{18}$F-FDG-PET images, late-phase images were used. To analyze the $^{99m}$Tc-TF and $^{123}$I-BMIPP SPECT images, the rest images were used. We analyzed the late-phase glucose-loaded $^{18}$F-FDG-PET images because the defect areas of the glucose-loaded $^{18}$F-FDG-PET images were similar in the early and late phases. We used a long imaging time to compensate for the decreasing counts of $^{18}$F-FDG in the late-phase, and the late-phase images presented clear definitive boundaries because of the lower background activity.

Ejection fraction (EF) values were analyzed using $^{99m}$Tc-Tc gated SPECT images to evaluate the global cardiac function.

### Evaluation of Phantom Model Images With the Imaging Equipment

We obtained images using the 3.0-cm defect-phantom model (Kyoto Kagaku) and compared the $^{18}$F-FDG-PET, $^{99m}$Tc-Tc SPECT and $^{123}$I-BMIPP SPECT images obtained with the equipment (Figure 1). The $^{99m}$Tc-TF SPECT images showed large defect areas of reduced myocardial uptake around the infarct regions (defect-phantom) because of the spatial resolution and the influence of low-energy photons.\(^4\) However, virtually equal defect-images were obtained using $^{18}$F-FDG-PET and $^{123}$I-BMIPP images.

### Statistical Analyses

The data are expressed as the mean±SD. A repeated measures ANOVA test was used to analyze continuous data. The TDS values among the 3 groups were determined using the Bonferroni/Dunn test for post-hoc analysis. The statistically significant level was defined as P<0.05. The analyses were performed using statistical analysis software (StatView; SAS Institute Inc, Cary, NC, USA).

### Results

#### Patients’ Characteristics (Table 1)

The mean age of the patients (6 males, 1 female) was 61.1±12.7 years. The average duration from the onset of MI to hospitalization was 5.0±3.5 h. The mean HbA\(_1c\) level was 6.6±1.3% (JDS: Japan diabetes Society), and 4 patients had diabetes mellitus. The mean hs-CRP level obtained immediately after PCI was 5.0±3.5 h. The mean LVEF assessed with left ventriculography immediately after PCI was 50.4±7.2%, and the mean cardiac index measured by Swan-Ganz catheter was 3.19±0.48 L/min/m\(^2\). The mean number of examined days of glucose-loaded $^{18}$F-FDG-PET images was 4.88±2.75 days for the acute phase, 20±4 days for the subacute phase, 37±3 days for the chronic phase, 122±12 days for the mid-term followed phase and 275±49 days for the long-term followed phase, as shown in Table 2.

### Serial Changes in hs-CRP (Figure 2)

The mean hs-CRP values of the examined glucose-loaded $^{18}$F-FDG-PET images were 4.88±5.37 mg/dl in the acute phase, 0.15±0.20 mg/dl in the subacute phase and 0.12±0.07 mg/dl in the chronic phase. hs-CRP showed normalization within 3 weeks from the onset of AMI.

### Serial Changes in TDS of Myocardial Scan Imaging

The mean TDS of the glucose-loaded $^{18}$F-FDG-PET images was 22.3±10.5 in the acute phase, 20.7±7.9 in the subacute phase, 14.9±6.8 in the chronic phase, 15.6±7.5 in the mid-term phase.

### Table 1. Characteristics of the 7 Patients With Acute Myocardial Infarction

| Age (years) | 61.1±12.7 |
| Sex (M/F) | 6/1 |
| Culprit lesion, seg.6/seg.7 | 6/1 |
| Time from onset (h) | 5.0±3.5 |
| Diabetes mellitus (+/−) | 4/3 |
| Glucose (on adm.) (mg/dl) | 195±54 |
| HbA\(_1c\) (JDS) (%) | 6.6±1.3 |
| Lipids | |
| TC (mg/dl) | 221±54 |
| HDL-C (mg/dl) | 48.3±8.1 |
| TG (mg/dl) | 130±106 |
| High-sensitivity CRP (on adm.) (mg/dl) | 0.92±1.41 |
| Cardiac enzymes | |
| Max. CK (U/L) | 3,175±1,531 |
| Max. CK-MB (mg/dl) | 301±144 |
| Max. AST (mg/dl) | 289±92 |
| Time to CK-max. (h) | 9.9±4.8 |
| LVEF on angioplasty (%) | 50.4±7.2 |
| CI by SG (L/min/m\(^2\)) | 3.19±0.48 |

Adm., admission; AST, aspartate transaminase; CI, cardiac index; CK, creatine kinase; CK-MB, CK myocardial bound; CRP, C-reactive protein; HDL-C, high-density lipoprotein cholesterol; LVET, left ventricular ejection fraction; seg., segment; SG, Swan-Ganz catheter; TC, total cholesterol; TG, triglycerides.
Followed phase and 12.8±7.6 in the long-term followed phase. The serial TDS of the glucose-loaded 18F-FDG-PET images presented a statistically significant time-dependent decrease toward the long-term followed phase (P<0.001) (Figure 3A).

The mean TDS of the 123I-BMIPP SPECT images was 15.0±9.6 in the subacute phase, 10.0±6.6 in the chronic phase, 10.0±6.2 in the mid-term followed phase and 9.0±5.8 in the long-term followed phase. The serial TDS of the 123I-BMIPP images presented a statistically significant time-dependent decrease approaching the long-term followed phase (P<0.05), similar to the changes observed in the glucose-loaded 18F-FDG-PET images (Figure 3B).

The mean TDS of the 99mTc-TF SPECT images was 12.6±9.1 in the subacute phase, 10.0±8.0 in the chronic phase, 7.7±5.3 in the mid-term followed phase and 7.7±6.2 in the long-term followed phase. The serial TDS of the 99mTc-TF images presented a statistically significant time-dependent decrease approaching the long-term followed phase (P<0.01), the same as that seen in the glucose-loaded 18F-FDG-PET and 123I-BMIPP SPECT images. In addition, the TDS values were similar for the mid-term and long-term followed phases (Figure 3C).

Comparison of Serial Changes in TDS in the Glucose-Loaded 18F-FDG-PET, 123I-BMIPP SPECT and 99mTc-TF SPECT Images

Table 3 presents the serial changes in TDS for the 3 radiopharmaceuticals. The TDS values of the glucose-loaded 18F-FDG-PET images were significantly larger than those of the 123I-BMIPP SPECT and 99mTc-TF SPECT images in all phases. The TDS values of the 123I-BMIPP SPECT images tended to be larger than those of the 99mTc-TF SPECT images, except in the chronic phase, which did not show any significant differences.

Serial Changes in EF Values Analyzed Using 99mTc-TF SPECT Images

The mean EF estimated from the 99mTc-TF gated SPECT images was 57.1±6.9% in the subacute phase, 62.7±4.7% in the chronic phase, 64.9±8.5% in the mid-term followed phase and 60.7±6.3% in the long-term followed phase (Figure 4). Serial changes in EF values presented statistically significant improvements (P<0.05).

Case Presentation

A 79-year-old woman was admitted to hospital because of...
Figure 3. Serial changes in the total defect scores (TDS) of (A) glucose-loaded $^{18}$F-FDG-PET images, (B) $^{123}$I-BMIPP SPECT images and (C) $^{99m}$Tc-TF SPECT images. BMIPP, $^{123}$I-$\beta$-methyl-p-iodophenyl-pentadecanoic acid single-photon emission computed tomography (SPECT); $^{18}$F-FDG-PET, $^{18}$F-fluoro-2-deoxyglucose (FDG) positron emission tomography; $^{99m}$Tc-TF, $^{99m}$Tc-Tetrofosmin (TF) gated SPECT.
AMI with the culprit lesions in the proximal left anterior descending coronary artery. Additionally, the patient had diabetes mellitus as an underlying disease. The occluded coronary artery was successfully reperfused during urgent coronary angioplasty, and the peak serum levels of CK and CK-MB were 4,425 U/L and 477 mg/dl, respectively. As shown in Figure 5, the defect areas in the glucose-loaded $^{18}$F-FDG-PET images were larger than those in the $^{99m}$Tc-TF SPECT and $^{123}$I-BMIPP SPECT images in all phases. Additionally, comparing the $^{123}$I-BMIPP SPECT and $^{99m}$Tc-TF SPECT images, the $^{123}$I-BMIPP SPECT images showed larger defect areas until the mid-term followed phase (4 months later), and both images presented similar defect areas in the long-term followed phase.

**Discussion**

The myocardium responds to ischemia by switching the energy substrate from fatty acid metabolism to glucose metabolism.² It is widely known and many reports show that glucose metabolism persists in the impaired myocardium in patients with an old MI and that left ventricular function is improved by PCI. However, it is unclear whether a higher detecting capability for myocardial viability should be adopted in patients who successfully undergo PCI to treat AMI.²¹,²² Some reports indicate that myocardial viability is overestimated when evaluating fasted $^{18}$F-FDG-PET images because $^{18}$F-FDG accumulates in inflammation sites.¹¹,²³ We considered that the defect areas of $^{18}$F-FDG-PET images taken in the acute phase would be smaller than those taken in the subacute phase because $^{18}$F-FDG accumulates in the leukocytes that infiltrate the infarct-related segments. However, in this study the defect areas observed in the acute phase were larger than those observed in the subacute phase. Obvious increases in inflammatory responses in infarcted myocardium were observed in the acute phase, together with significant increases in hs-CRP values. These results suggest that the influence of local inflammation associated with AMI on glucose-loaded $^{18}$F-FDG-PET images is much smaller than that of severely impaired glucose metabolism in the damaged myocardium.

In our study, the defect areas in the glucose-loaded $^{18}$F-FDG-PET images were larger than those in the images from the other myocardial scans in all examined phases. We estimated the influence of the imaging equipment and image processing in order to confirm our results. We evaluated each defect image using a 3.0-cm defect-phantom model to inves-

---

| Table 3. Comparison of Serial Changes in the Total Defect Score for the Glucose-Loaded $^{18}$F-FDG-PET, $^{123}$I-BMIPP SPECT and $^{99m}$Tc-TF SPECT Images |
|----------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|                                 | Acute phase     | Subacute phase  | Chronic phase   | Mid-term        | Long-term       |
| $^{18}$F-FDG-PET                | 22.3±10.5       | 20.7±7.9        | 14.5±6.8        | 15.5±7.5        | 12.8±7.6        |
| $^{123}$I-BMIPP                 | 15.0±9.6        | 10.0±6.6        | 10.0±6.2        | 9.0±5.6         | **               |
| $^{99m}$Tc-TF                   | 12.6±9.1        | 10.0±8.0        | 7.7±5.3         | 7.7±6.2         | **               |

*P<0.05, **P<0.01.

Abbreviations as in Table 2.
Serial Changes in $^{18}$F-FDG-PET for AMI

tigate procedural influences. As a result, virtually equal sizes of the defect areas with clear edges were detected in the images of both $^{18}$F-FDG-PET and $^{123}$I-BMIPP; however, the edges of the defect areas in the $^{99m}$Tc-TF images were blurred, and the defect areas were overestimated. Considering the results of the phantom model imaging, we concluded that the observation of larger defect areas in the glucose-loaded $^{18}$F-FDG-PET images of impaired myocardium compared with those seen in the $^{123}$I-BMIPP and $^{99m}$Tc-TF SPECT images was not influenced by either the imaging equipment or image processing. The serial changes in the $^{18}$F-FDG-PET, $^{123}$I-BMIPP and $^{99m}$Tc-TF SPECT images in our study indicated that the $^{18}$F-FDG-PET images of possibly underestimated the myocardial viability of the infarcted myocardium, even in the long-term followed phase.

With regard to the underestimation of myocardial viability by the glucose-loaded $^{18}$F-FDG-PET images taken after reperfusion for AMI, reverse mismatch, which presents as a low uptake in $^{18}$F-FDG-PET images and a high uptake in $^{99m}$Tc-TF and $^{123}$I-BMIPP SPECT images, was reported in patients with multivessel coronary disease, left bundle branch block, and diabetes mellitus, and in patients who underwent thrombolysis or PCI. Shirasaki et al discussed the reasons for the underestimation of myocardial viability and hypothesized that well-oxygenated myocardium obtained by reperfusion causes an increase in the aerobic metabolism of fatty acids and a decrease in anaerobic metabolism, such as glucose metabolism, and these situations are unchanged after glucose loading. Myeers et al reported that the major metabolic substrate present in the infarct region after recovery from ischemia was fatty acids and that glucose metabolism accounted for only 25% in their study of dogs. Schweiger and Pirich described reverse mismatch as a consequence of incomplete metabolic standardization. For example, low glucose use in patients with insulin resistance, which is frequently observed in coronary artery disease, leads to decreased FDG uptake, even in areas that are normally perfused. They also indicated that biological factors cause altered substrate use in normally perfused myocardium. The reverse mismatch of low uptake of glucose-loaded $^{18}$F-FDG-PET images might be explained by these reports.

On the other hand, Kanayama et al reported 1 case of imaging of unstable angina in which defect areas of glucose-loaded $^{18}$F-FDG-PET images taken before percutaneous transluminal coronary angioplasty improved 3 months after PCI. Their report highlights the fact that glucose metabolism is suppressed in myocardial stunning regions associated with ischemia and is improved with recovery of myocardial perfusion. This observation conflicts with the hypothesis proposed by Shirasaki et al. Mesotten et al discuss reverse mismatch when comparing glucose-loaded $^{18}$F-FDG-PET and $^{13}$NH3-PET images in patients with AMI and they conclude that the myocardium might utilize substrates other than glucose and fatty acids, such as lactic acid, in ischemic conditions because of its omnivorous nature. Beyersdorf et al reported in an animal study that in cases of single-vessel disease, increased glucose metabolism associated with increases in blood flow and endogenous adenosine in normal areas adjacent to the infarct region causes mild increases in $^{18}$F-FDG uptake and excessive contraction of the myocardium in areas not affected by culprit lesions because of abnormalities in vasodilators after MI. Godino et al reported that in the first AMI of single-vessel disease, abnormal accumulation of $^{18}$F-FDG outside of isch-

![Figure 5](image-url)

Figure 5. Serial changes in $^{18}$F-FDG-PET, $^{123}$I-BMIPP and $^{99m}$Tc-TF SPECT images in a 79-year-old woman with diabetes mellitus who presented with an anterior acute myocardial infarction. BMIPP, $^{123}$I-β-methyl-p-iodophenyl-penta-decanoic acid single-photon emission computed tomography (SPECT); $^{18}$F-FDG-PET, $^{18}$F-fluoro-2-deoxyglucose (FDG) positron emission tomography; $^{99m}$Tc-TF, $^{99m}$Tc-Tetrofosmin (TF) gated SPECT.
emic areas was observed, which was caused by the stimulation of GLUT-1 because of the inflammation associated with the MI. They also observed abnormal accumulation of 18F-FDG at 1 year after the AMI.

As has been discussed, myocardial metabolism in AMI fluctuates, and changes in the glucose metabolism of normal surrounding areas, as well as that of the ischemic regions, can be seen. Therefore, evaluating myocardial viability after reperfusion of MI using 18F-FDG-PET imaging alone is not efficacious. However, 18F-FDG-PET imaging has advantages. Generally, it is well known that 123I-BMIPP imaging will “memorize” acute ischemic events for 2 weeks. Additionally, the defect areas in the glucose-loaded 18F-FDG-PET images were significantly larger than those in the 123I-BMIPP images in our study. Impaired glucose metabolism was prolonged for longer than fatty acid metabolism, and 18F-FDG-PET images memorize acute ischemic events longer than 123I-BMIPP images.

We performed several rounds of radionuclide examination in this study. The sum of the effective radiation doses in 1 examined phase of 18F-FDG-PET, 99mTc-Tetrofosmin and 123I-BMIPP myocardial SPECT imaging was 14.95 mSv in our study. The total radiation dose used for each patient in all studied phases was 67.72 mSv, and the effective dose of 1 cardiac catheterization was reported to be 22.7 mSv by the International Commission on Radiological Protection (ICRP) and in a previous report. Therefore, the total effective dose used in the radionuclide study of each patient during the 9 months of this study was similar to that used in 3 instances of cardiac catheterization.

Study Limitations
We used glucose-loaded 18F-FDG-PET imaging with bolus administration of insulin in this study. However, the possibility that elevated blood levels of free fatty acids resulting from insulin resistance and depleted conditions blocked the accumulation of 18F-FDG cannot be refuted because diabetic patients were included in this study. Therefore, we should have measured the blood levels of free fatty acids and insulin during 18F-FDG-PET imaging. Concerning the method of glucose loading, the insulin clamp technique is reported to be preferred for patients with diabetes mellitus. However, the same reports also show that the influence can be minimized by using late-phase images taken 3h after the administration of 18F-FDG. We also used late-phase images in this study. Because we utilized SPECT and PET images to compare myocardial perfusion with glucose metabolism, the possibility that differences in modality caused the falsely positive perfusion-metabolism mismatch cannot be refuted. However, 1 report indicates that this influence is larger in the anterior walls of females and in the inferior walls of all patients. We considered the influence to be limited in this study because we included only 1 female patient and all of the evaluated vessels were in the anterior walls of the patients. One report identifies interleukin (IL)-6 and IL-2 as markers of inflammation, which are influenced by accumulation of 18F-FDG [31], and suggests that the use of hs-CRP alone as a marker of inflammation in this study was insufficient.

Conclusions
The defect areas of glucose-loaded 18F-FDG-PET images were significantly larger than those of 123I-BMIPP and 99mTc-TF SPECT images taken during an observation period of 9 months in patients who successfully underwent PCI to treat anterior AMI. Additionally, the impairment of glucose metabolism was prolonged.

Disclosures
The authors declare that they have no conflicts of interest.

References
20. Garcia EV, Travin KV, Maddahi J, Prigent F, Friedman J, Arreda J,


