

## Thallium-201 reinjection images can identify the viable and necrotic myocardium similarly to metabolic imaging with glucose loading $^{18}\text{F}$ -fluorodeoxyglucose ( $^{18}\text{FDG}$ )-PET

Naonori OGIU, Kenji NAKAI and Katsuhiko HIRAMORI

*Second Department of Internal Medicine, Iwate Medical University*

We compared the usefulness of  $^{18}\text{F}$ -fluorodeoxyglucose ( $^{18}\text{FDG}$ )-PET with glucose loading and thallium-201 ( $^{201}\text{Tl}$ ) reinjection imaging for determining the viability of the myocardium in 21 patients with an old anterior myocardial infarction. We obtained transaxial views during  $^{201}\text{Tl}$  reinjection imaging performed 10 minutes after post-exercise injection of 37 MBq  $^{201}\text{Tl}$ . PET imaging with 75 g oral glucose loading was performed 60 min after injection of 148 MBq of  $^{18}\text{FDG}$ . Wall motion was evaluated by echocardiography. Excellent  $^{18}\text{FDG}$ -PET images were obtained in 19 of 21 subjects in whom plasma glucose levels were below 251 mg/dl. The results of  $^{201}\text{Tl}$  reinjection imaging and  $^{18}\text{FDG}$ -PET imaging were in agreement in 20 of the 21 subjects. Echocardiography demonstrated hypokinesis or akinesis in segments identified as abnormal in imaging studies. Our results showed that  $^{201}\text{Tl}$  reinjection imaging identified the viable and necrotic myocardium similarly to metabolic imaging obtained by  $^{18}\text{FDG}$ -PET with glucose loading.

**Key words:** myocardial infarction, myocardial viability,  $^{201}\text{Tl}$  reinjection, positron emission tomography,  $^{18}\text{FDG}$