Summary

Improvement of ^{99m}Tc-Pyrophosphate Scintigraphy in Detection of Acute Myocardial Infarction: Combined with ^{99m}Tc-Tetrofosmin

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[Background] ^{201}Tl and ^{99m}Tc-pyrophosphate (PYP) dual scintigraphy is daily used in the detection of acute myocardial infarction (AMI). However, ^{201}Tl is not available on emergent situation. We proposed a new method for detection of AMI combined ^{99m}Tc-PYP with ^{99m}Tc-tetrofosmin (TF). **[Methods]** ^{99m}Tc-PYP (740 MBq) was administered to 25 patients with AMI, and 3.5 hours later, planar imaging (PYP planar) and SPECT were performed (PYP-SPECT). Immediately after cessation of PYP-SPECT, ^{99m}Tc-TF (370–740 MBq) was injected and 5 minutes later SPECT was performed in the same position (TF-SPECT). PYP-SPECT and TF-SPECT were reconstructed in the same geometric status to permit superimpose of PYP-SPECT and TF-SPECT images. Two experts and 2 beginners of nuclear medicine physician interpreted the images in three ways; PYP planar image only, PYP-SPECT, and PYP-SPECT with TF-SPECT. **[Results]** PYP-SPECT combined with TF-SPECT shows 100% detectability of the AMI lesions, which is significantly higher than other two methods in both experts and beginners. **[Conclusion]** PYP-SPECT combined with TF-SPECT is a powerful method for detection of AMI.

Key words: Acute myocardial infarction, ^{99m}Tc-pyrophosphate, ^{99m}Tc-tetrofosmin, SPECT, Detectability.