# Summary

# Diagnostic and Prognostic Evaluation of Unstable Angina Pectoris Using ECG-Gated Single Photon Emission Computed Tomography (SPECT) with $^{99m}$Tc-Tetrofosmin

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[Purpose] The purpose of this study is to the diagnostic accuracy and the value as prognostic predictors based on the perfusion and/or functional analysis using the QGS program on $^{99m}$Tc-tetrofosmin gated SPECT (Tf QGS-SPECT) in patients with unstable angina pectoris (UAP) who admitted to the CCU. [Methods] Fifty seven consecutive patients (37 males and 20 females, mean age: $62 \pm 7$ years) with suspected UAP, who underwent Tf QGS-SPECT and coronary angiography, were entered into this study. We compared the accuracy for diagnosing UAP in the following 3 analyses: 1. Perfusion analysis alone, 2. Functional analysis alone, 3. Perfusion analysis with functional analysis. In addition, we evaluated the prognostic values of the perfusion and/or functional analysis with Tf QGS-SPECT. [Results] Thirty-five of 57 patients with suspected UAP had significant coronary stenosis. The highest accuracy was obtained by adequate combination of perfusion and functional analysis (sensitivity 83%, specificity 82%, accuracy 82%). Thirteen of 29 patients with positive findings in this analysis needed emergent or urgent coronary revascularization. Five of 6 patients with false negative findings in this analysis were left circumflex artery lesions, and two of these patients needed emergent coronary revascularization. [Conclusion] Evaluation with perfusion and functional images using Tf QGS-SPECT is useful to improve the accuracy of diagnosis and to predict the prognosis of patients with UAP who admitted to the CCU.

**Key words:** Quantitative gated SPECT, Perfusion images, Function images, Accuracy, Unstable angina pectoris.