

## Summary

### Diagnosis of Coronary Artery Disease by Thallium-201 Myocardial Scintigraphy with Intravenous Infusion of SUNY4001 (Adenosine) in Effort Angina Pectoris—The Clinical Trial Report at Multi-Center: Phase II—

Yasushi SAKATA\*<sup>1,†</sup>, Tsunehiko NISHIMURA\*<sup>2</sup>, Junichi YAMAZAKI\*<sup>3</sup>, Shigeyuki NISHIMURA\*<sup>4</sup>, Teishi KAJIYA\*<sup>5</sup>, Kazuhisa KODAMA\*<sup>6</sup> and Kazuzo KATO\*<sup>7,‡</sup>

†: Author   ‡: Chairman

\*<sup>1</sup>Department of Cardiology, Osaka Police Hospital

(current position: Department of Internal Medicine and Therapeutics, Osaka University School of Medicine)

\*<sup>2</sup>Division of Tracer Kinetics, Biomedical Research Center, Osaka University School of Medicine

(current position: Department of Radiology, Kyoto Prefectural University of Medicine)

\*<sup>3</sup>First Department of Internal Medicine, Toho University School of Medicine

\*<sup>4</sup>Department of Cardiology, Yokohama Rosai Hospital

(current position: Second Department of Internal Medicine, Saitama University of Medicine)

\*<sup>5</sup>Department of Cardiology, Himeji Cardiovascular Center

\*<sup>6</sup>Department of Cardiology, Osaka Police Hospital

\*<sup>7</sup>Cardiovascular Institute

Forty-four patients with effort angina pectoris were evaluated with SUNY4001 (adenosine) thallium-201 (<sup>201</sup>Tl) myocardial scintigraphy to detect coronary artery disease.

These patients had single-vessel disease (AHA 90% stenosis) in either RCA or LAD. Adenosine was infused at the rate of 120 or 140  $\mu\text{g}/\text{kg}/\text{min}$  for six minutes. 111 MBq of <sup>201</sup>Tl was injected after three minutes of the start of the infusion. The early and delayed images were obtained by SPECT imaging.

The sensitivity was 94.7% at 120  $\mu\text{g}/\text{kg}/\text{min}$  and 84.2% at 140  $\mu\text{g}/\text{kg}/\text{min}$ . Adenosine <sup>201</sup>Tl myocardial scintigraphy showed high accuracy for detecting significant coronary artery disease.

Adverse reactions occurred in 77.3% of the patients. Regarding the rates of the adverse reactions, there was no significant difference between 120 and 140  $\mu\text{g}/\text{kg}/\text{min}$ . Major adverse reactions were Chest pain/discomfort (52.3%) and Flushing/Feeling of warmth (27.3%). No serious complication was ob-

served at any infusion rate. Most of adverse reactions disappeared shortly. Only two patients required treatment for moderate chest pain, which, however, disappeared in several minutes. One of the treatments was merely the termination of adenosine infusion, and the other was sublingual spray of nitroglycerin.

Adenosine infusion caused slight decrease in blood pressure and increase in heart rate. The hemodynamic changes resolved within several minutes after the adenosine infusion. Decrease in systolic blood pressure of more than 20 mmHg from the base level occurred in 26.1% and 52.4% at 120 and 140  $\mu\text{g}/\text{kg}/\text{min}$  infusion rate respectively.

Therefore, the adenosine infusion at 120  $\mu\text{g}/\text{kg}/\text{min}$  should be considered safe and useful for the diagnosis of coronary artery disease by pharmacologic stress imaging.

**Key words:** Adenosine, <sup>201</sup>Tl, SPECT, Sensitivity, Effort angina pectoris.