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INFLUENCE OF THE INFARCT EXTENSION ON THE EXERCISE-INDUCED ST DEPRESSION IN THE LEADS OPPOSITE TO THE INFARCTING WALL IN ONE-VESSEL OLD MYOCARDIAL INFARCTION. T.Ohkubo, H.Kataoka, S.Takaoka, H.Tabuchi, K.Nakamura and S.Hashimoto. 2nd Dept of Int Med, Kagoshima Univ, Kagoshima.

The influence of the infarct extension on the ST depression in the leads opposite to the infarcting wall, i.e., II, III and aVF in anterior old myocardial infarction (OMI) and V1 to V4 in inferior OMI, was evaluated in OMI without significant stenosis other than infarct-related coronary artery. Study population were 15 patients with anterior OMI and 16 with inferior OMI. Stress Tl-201 myocardial images were obtained in anterior, 30° LAO and 60° LAO views, immediately and 3-4 hr delayed after submaximal exercise using bicycle ergometer. Exercise 12-lead ECG was recorded simultaneously during myocardial imaging. Significant ST depression was defined as  $\geq 1$  mm of the horizontal or downsloping ST depression or  $\geq 15$  mm of the uprising ST depression 60 msec after the J point.

ST depression opposite to the infarcting wall was observed in 2/15 (13.3%) in anterior OMI and 5/16 (31.3%) in inferior OMI. In anterior OMI, no significant association was found between the ST depression and the infarct extension. However, significant correlation was found between the ST depression and the infarct extension in inferior OMI. Namely, incidence of the precordial ST depression was significantly higher in the patients with inferoseptal defect compared with those without it (80% vs 9.1%,  $p < 0.05$ ). Exercise-induced ST elevation in the infarct-related leads or infarct size did not significantly affect the precordial ST depression in inferior OMI.

Thus, infarct extension from the inferior wall to inferoseptal wall may affect the precordial ST displacement in the patients with 1-vessel inferior OMI.

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EFFICACY OF NICORANDIL IN PATIENTS WITH ANGINA PECTORIS —ASSESSMENT BY EXERCISE TL-201 MYOCARDIAL SCINTIGRAPHY M.Ohnishi, K.Suda, T.Mori, Y.Kanoh, H.Shiotani, Y.Ohmori, K.Maeda and H.Fukuzaki The First Department of Internal Medicine, Kobe University School of Medicine, Hyogo

To evaluate the efficacy of Nicorandil (NC) for angina pectoris (AP), exercise Tl-201 scintigraphy was performed twice in 7 patients with AP before and after intravenous administration of NC 4mg. In the control study, exercise was performed until the appearance of chest pain or markedly abnormal changes in ECG (Cont-Ex), and after one week, exercise scintigraphy was reperformed at the same work load with administration of NC. Tl images were compared both qualitatively and quantitatively. After NC, symptoms improved in all patients and ST depression improved in 6 of 7 pts. In Tl images, significant improvement in Tl-201 relative activity of abnormal segments at control was observed after NC (76.9 $\pm$ 5.3 vs 90.2 $\pm$ 5.4). On the other hand, in all patients no significant change was induced by NC in heart rate, blood pressure and double product both at rest and at peak exercise. In conclusion, NC has beneficial effects for the treatment of AP.

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SIGNIFICANCE OF MYOCARDIAL ISCHEMIA IN EXERCISE-INDUCED ST ELEVATION IN PATIENTS WITH PREVIOUS ANTERIOR MYOCARDIAL INFARCTION. M.Saito, H.Asonuma, T.Sumiyoshi, M.Tomita, K.Haze, Y.Gotou, K.Hiramori, K.Hayashida, T.Uehara, T.Nishimura. National Cardiovascular Center

Role of myocardial ischemia (IS) in the pathogenesis of exercise-induced ST elevation was investigated in 60 patients with anterior myocardial infarction (MI) and single vessel disease of LAD, using stress myocardial scintigraphy (SMS). Myocardial ischemia was judged to be present when post-MI angina and/or significant redistribution (RD) in SMS were present. Patients with post-MI angina had less severe defects in delayed myocardial images as well as significant RD, indicating close relation between clinical and scintigraphic ISs. ST elevation were classified, according to the extent of ST and T wave changes in anterior chest leads, into two types; ST-dominant ST elevation and T-dominant ST elevation. The former had more abnormal Q waves, more severe LV asynergy, less ejection fraction, suggesting severe LV asynergy. On the other hand, T-dominant ST elevation had more incidence of clinical and scintigraphic evidence of IS. Sensitivity and specificity of this type of ST elevation for the diagnosis of IS was 56% and 78%, respectively. Thus T-dominant ST elevation strongly suggests myocardial ischemia in patients with previous MI.

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DETECTION OF RESIDUAL MYOCARDIAL ISCHEMIA IN MYOCARDIAL INFARCTION BY QUANTITATIVE THALLIUM-201 IMAGING: COMPARISON TO MYOCARDIAL METABOLISM. Y.Higashino, M.Naka, S.Nanto, K.Kodama, M.Inoue\*, Cardiovascular Division of Osaka Police Hospital, \*Osaka University, School of Medicine. Osaka.

To evaluate the residual myocardial ischemia in myocardial infarction, twenty cases with anteroseptal myocardial infarction and seven cases of normal control were assessed by quantitative analysis of stress Tl-201 myocardial ECT. Quantitative indices are washout rate (WR%), relative WR(%), and  $\Delta$ Tl uptake(%) in the anterior or the septal region. Regional myocardial lactate extraction ratio (LER %) was obtained from aortic and great cardiac venous samplings during rapid atrial pacing (150/min 3min). Infarct cases were divided into two groups according to LER. Group 1 of LER < 10% (ischemic group, n=11), and Group 2 of LER  $\geq$  10% (non-ischemic group, n=9). Results were as follows.

	WR(%)	Rela.WR(%)	$\Delta$ Tl uptake(%)
Control	31 $\pm$ 8	83 $\pm$ 9	2 $\pm$ 4
Group 1	27 $\pm$ 14	69 $\pm$ 25	7 $\pm$ 8
Group 2	0 $\pm$ 21*	22 $\pm$ 25*	21 $\pm$ 5*

mean $\pm$ SD \* $p < 0.01$  vs Group 1 and Control Ischemic group showed apparent slow Tl washout and good filling-in. Thus, the quantitative analysis of stress Tl-201 myocardial ECT can detect the residual ischemic but viable myocardium in myocardial infarction.