

## Follow-up of Patients after Coronary Intervention by Non-stress Echocardiography

—Detection of  $\geq 75\%$  Coronary Artery Stenosis with Strain Rate Function—

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### Abstract

**Background:** In combination with coronary angiography( CAG ), Stress echocardiography is the one of the screening methods to detect coronary artery stenosis after percutaneous coronary intervention( PCI ), although a non-stress method is desirable from the standpoint of patients burden and time-consuming at out-patient clinic. Toward that end, the potential of non-stress echocardiography with strain rate (SR) analysis was examined.

**Method:** The apical views of the left ventricular wall motion were evaluated by longitudinal two-dimensional (2D) SR to yield four parameters: 100- and 200-msec SR values, and minimum SR values between 100- to 200-msec and mean SR values during 100- to 200-msec. Diagnostic accuracy with these parameters for coronary artery stenosis was assessed by determining the coefficients of discriminant function that best predicts an independent diagnosis.

**Results:** The following discriminant function yields 86.39% probability of diagnosis of  $\geq 75\%$  stenosis of coronary artery when discriminant score  $Z > 0$ :  $Z = 4.91 + 1.02 \times (100\text{-msec SR value}) + 1.23 \times (200\text{-msec SR value}) - 0.46 \times (\text{minimum SR value}) + 4.83 \times (\text{mean SR value})$ .

**Conclusion:** Thus, 2D SR analysis of resting apical views with discriminant function is as diagnostically accurate for coronary artery stenosis as stress echocardiography. By non-stress echocardiography in combination with CAG, it is possible enough to follow-up patients more frequently and precisely after PCI.

**Key words:** Follow-up of post-coronary intervention patients, Strain rate discriminant function of non-stressed echocardiography, Combination method of strain rate function and coronary angiography