

## EL13. Assessment of Myocardial Viability

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Accurate detection of reversible myocardium has great clinical importance, especially in patients with severely impaired ventricular function and being considered for interventional therapy. Positron emission tomography (PET) with fluorine-18 labeled fluoro-deoxyglucose (FDG) has been used for this purpose on the basis of preserved metabolic activity in reversible ischemic myocardium. This technique showed high positive and negative predictive values for improvement of regional function after revascularization therapy in patients with severe coronary artery disease. While PET is considered the “gold-standard” modality for detection of viable myocardium, limited availability and expense have limited its more widespread use. On the other hand, thallium-201 imaging has been widely used for assessing myocardial viability. Although routine stress-redistribution analysis on thallium-201 imaging may underestimate reversible

ischemic myocardium, modified protocols of thallium imaging improved prediction of reversibility of regional dysfunction. In addition, recent radiopharmaceutical development permits assessment of regional myocardial metabolism *in vivo* with SPECT, which provides similar information of myocardial viability as FDG-PET. Furthermore, several recent studies indicated low-dose dobutamine echocardiography as a promising technique for predicting recovery of asynergic myocardium on the basis of the change in regional contractile function after dobutamine infusion. The clinical roles of these diagnostic modalities in the setting of depressed ventricular function should be carefully evaluated. This course will describe the characteristics of each modality, and the strategy of viability assessment in patients with coronary artery disease will be discussed.