# Accuracy of global longitudinal strain in prediction of left ventricular remodeling after primary percutaneous coronary intervention

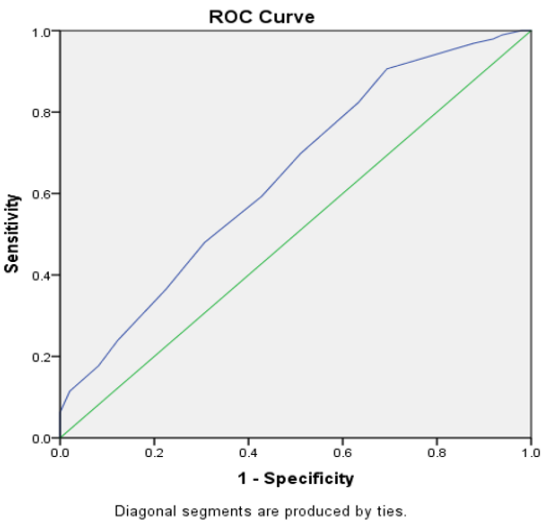
Ei Ei Min, Yin Nwe Tun, Khaing Khaing Shein, Nwe Nwe
Department of Cardiology, Yangon General Hospital, Yangon, Myanmar

**Introduction :** Left ventricular remodeling after acute myocardial infarction treated by primary PCI is an important precursor for the development of heart failure and important predictor of mortality. The early identification of the patients at risk of LV remodeling after acute myocardial infarction has prognostic and therapeutic implications. .

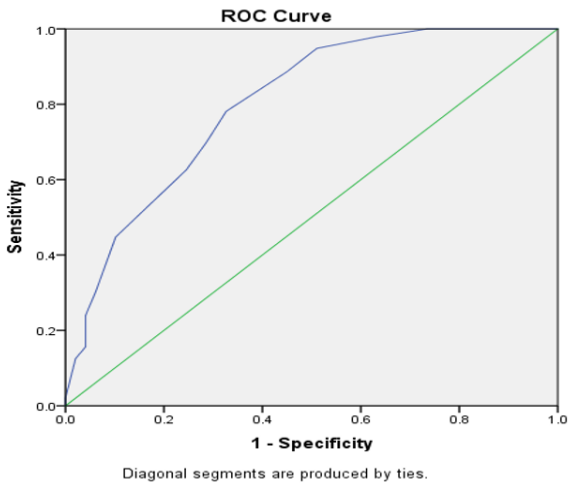
**Aim** : The GLS has been shown to be accurate in predicting LV remodeling after primary PCII. The study was carried out to determine the accuracy of GLS in prediction of LV remodeling after primary PCI.

**Methods :** The hospital based prospective analytical study including 145 patients who underwent primary PCI was conducted at Department of Cardiology, Yangon General Hospital from April 2020 to November 2021. Echocardiographic assessment of global longitudinal strain (GLS), left ventricular dimensions ( LVEDV, LVESV) were carried out within 24 hours and 3 months after primary PCI. The LV remodeling is defined as > 20% increase in left ventricular end diastolic volume (LVEDV) after 3 months of acute myocardial infarction.

**Findings :** The left ventricular remodeling occurred in 33.8% of the study population. The baseline GLS measured within 24 hours after primary PCI predicted LV remodeling at 3 months with -8.5% cutoff value, 91% sensitivity, 31% specificity and 70% accuracy. The GLS measured 3 months after primary PCI detected LV remodeling at 3 months with -12.5% cutoff value, 78% sensitivity, 67% specificity and 74% accuracy.




ROC curve for LV remodeling at 3 months using GLS measured within 24 hours after primary PCI




ROC curve for LV remodeling at 3 months using GLS measured 3 months after primary PCI

| Area | Std. Error | P value | Asymptotic 95% Confidence Interval | |
|---|---|---|---|---|
| | | | Lower Limit | Upper Limit |
| 0.64 | 0.05 | 0.005 | 0.55 | 0.74 |

Area under the curve for ROC using GLS (within 24 hours)

| Area | Std. Error | P value | Asymptotic 95% Confidence Interval | |
|---|---|---|---|---|
| | | | Lower Limit | Upper Limit |
| 0.80 | 0.04 | <0.001 | 0.72 | 0.88 |

Area under the curve for ROC using GLS (after 3 months)

**Conclusion :** It was found that the baseline GLS measured 24 hours after primary PCI was a sensitive marker to predict left ventricular remodeling at 3 months. It can be concluded that the baseline GLS is a useful predictor of adverse left ventricular remodeling after primary percutaneous coronary intervention.

.