**DIASTOLIC WALL STRAIN PREDICTS MORTALITY IN PATIENTS WITH NON-ST ELEVATION MYOCARDIAL INFARCTION**

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**Background:** Diastolic Wall Strain (DWS) is a preload-independent estimator of left ventricular (LV) stiffness. DWS correlates with systolic and diastolic indices of LV performance by speckle tracking echocardiography. This study investigates DWS as a predictor of mortality in patients with non-ST elevation myocardial infarction (NSTEMI).

**Methods:** Four hundred and thirty four consecutive patients had NSTEMI; mean age was 67 ± 14 years, 51% were male, 69% African American. Mean BSA = 1.9 ± 0.3, EF = 0.49 ± 0.14, TIMI Score = 4; median peak troponin = 3.4; 42% had PCI or CABG. DWS was defined as (LVPWs - LVPWd)/LVPWs where LVPWs = left ventricular posterior wall thickness in systole and LVPWd = wall thickness in diastole.

**Results:** On admission mean DWS was reduced at 0.32 ± 0.13 (normal 0.4 ± 0.07). Cox regression analysis showed a negative interaction between DWS and 1-year survival, even after adjustment for age, sex, race, TIMI score, EF, E/e’, and revascularization (p < 0.02). The c-index for DWS from the ROC curve was 0.60 (95% CI: 0.53 - 0.66). The best cut-off value for DWS was 0.25 (specificity 73%, sensitivity 40%).

**Conclusion:** DWS is an independent predictor of all-cause mortality in patients with NSTEMI. This measure is easily applied during routine echocardiography. Prospective studies are warranted to investigate use of DWS in guiding treatment of patients with NSTEMI.

**Clinical Implications:**DWS may be used as a tool to assess a patient’s risk of death with non-ST elevation myocardial infarction.