Prognostic Value of Troponin T after Myocardial Infarction: A Contemporary Community Experience

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Background: Troponin is the biomarker of choice for the diagnosis of myocardial infarction (MI) in clinical practice. Data on its value to predict short- and long-term outcomes post-MI are lacking from community studies. Further, measures of absolute risk, which are of high clinical relevance and provide incremental information over relative risk measures, have not been assessed previously.

Methods and Results: Consecutive Olmsted County, Minnesota residents with an incident MI diagnosed in 2002-2007 were studied (n=1,177). Maximal cardiac troponin T (cTnT) value was measured at a median of 1 day post-MI (median [Q1-Q3] value, 0.52 [0.16-1.75] ng/mL) and evaluated for predicting outcomes. During a mean follow-up of 16 months, 276 deaths occurred, 341 patients experienced a recurrent ischemic event, and 326 heart failure. A dose-response relationship was demonstrated early after MI between cTnT and the adjusted cumulative incidence of all outcomes. The multivariable-adjusted absolute risk differences (events/100 patients) between the upper and lower cTnT tertiles at 30 days were 5.83 (95% confidence interval [CI]: 1.43 to 10.24) for death, 5.24 (95% CI: 0.21 to 10.27) for recurrent ischemic event, and 6.88 (95% CI: 1.37 to 12.38) for heart failure. These differences were either maintained or increased at 2 years.

Conclusions: In the community, cTnT predicts death and nonfatal events including recurrent ischemic events and heart failure, independently of other prognostic factors. The increased risk associated with elevated cTnT appears shortly after MI and persists for at least 2 years.