



Chronic CAD/Stable Ischemic Heart Disease

CARDIAC TROPONIN REFLECTS SILENT MYOCARDIAL ISCHEMIA IN PATIENTS WITH STABLE CORONARY ARTERY DISEASE

ACC Moderated Poster Contributions
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Background: Cardiac troponin is an independent predictor of cardiovascular mortality in patients with stable coronary artery disease, yet the factors that determine circulating troponin concentration in these patients are not known. We hypothesise that circulating cardiac troponin in patients with stable coronary heart disease is due to recurrent silent myocardial ischaemia.

Methods: Ninety-eight patients with stable coronary artery disease (62 ± 7 years) were assessed on two occasions at least two weeks apart. Ambulatory blood pressure and 12-lead Holter monitoring were recorded for 24-hours and symptom severity was assessed using the Seattle Angina Questionnaire. Significant silent myocardial ischemia was defined as horizontal or down sloping ST-segment depression of at least 1 mm lasting at least 60 seconds. Cardiac troponin I was measured in serum using the ultra-sensitive Singulex Erenna System (Singulex Inc., Berkeley, CA, USA) following each visit.

Results: Cardiac troponin I concentrations were quantifiable above the limit of detection (LOD, 0.4 pg/mL) in all patients with a mean concentration of 6.1 pg/mL (95%CI 4.6-7.6 pg/mL). The inter-assay coefficient of variation (CV) was 11% at the LOD and was 17% between visits. Concentrations were above the 99th percentile of a healthy reference population (10.1 pg/mL) in 15% of patients. Few patients ($n=2$) reported angina during either visit, but troponin concentrations were significantly higher in patients with silent myocardial ischemia ($n=17$) compared to those without (16.1 ± 23.0 versus 5.1 ± 7.9 pg/mL; $P < 0.0001$). Troponin concentrations were associated with both maximum ST-segment depression ($r = -0.15$, $P = 0.03$) and total ischaemic burden over the 24-hour period ($r = -0.19$, $P = 0.009$).

Conclusion: Cardiac troponin concentrations above the recommended threshold for the diagnosis of myocardial infarction are present in as many as 1 in 6 patients with stable coronary artery disease and reflect in part reversible silent myocardial ischemia. These findings have major implications for the diagnosis of myocardial infarction.